

## Fault-Tolerant System and Methods With Trusted Message Acknowledgement

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### Abstract of the Disclosure

Improved methods for providing fault tolerance in a distributed computer system utilize an explicit, delayed acknowledgement message protocol to send an acknowledgement message to a workflow-requesting entity, such as a load manager and/or a requesting client, only upon completion of a workflow. The system includes workflow engines operating as a distributed queue group to load-balance processing requests from clients. The system also has a certified messaging capability that guarantees delivery of any message sent by a certified message sender by maintaining a persistent record of the message until an acknowledgement message is received back from the certified message receiver. In the event a hardware or software failure occurs during a workflow execution, the workflow is reassigned to a different workflow engine. Improved fault-tolerant computers and computer networks are also described.

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